

OPTIONAL FORM 99 (7-90)

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To **Luke Cole**From **Eva Chun**

Dept./Agency

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5099-101

GENERAL SERVICES ADMINISTRATION

BEFORE THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

In the Matter of:

TECK COMINCO ALASKA, INC.

Red Dog Mine,

Kotzebue, Alaska

NPDES Permit No. AK-003865-2

Docket No. CWA-10-2004-0141

COMPLIANCE ORDER BY
CONSENT and REQUEST
FOR INFORMATION

1. The following FINDINGS AND CONCLUSIONS are made, and COMPLIANCE ORDER BY CONSENT AND REQUEST FOR INFORMATION ("Order") issued, under the authority that Sections 308 and 309(a) of the Clean Water Act ("Act"), 33 U.S.C. §§ 1318 and 1319(a), vest in the Administrator of the United States Environmental Protection Agency ("EPA"). This authority has been delegated to the Regional Administrator, Region 10, and has been duly redelegated to the undersigned Director, Office of Water, Region 10.

I. FINDINGS AND CONCLUSIONS

2. Section 402(a) of the Act, 33 U.S.C. § 1342(a), authorizes the Administrator of EPA to issue NPDES permits for discharges of pollutants into waters of the United States upon such specific terms and conditions as the Administrator may prescribe.

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1 3. Section 301(a) of the Act, 33 U.S.C. § 1311(a), prohibits the discharge of pollutants by
2 any person, except as authorized by an NPDES permit or other specified statutory sections. Each
3 violation of an NPDES permit, and each discharge of pollutants that is not authorized by an NPDES
4 permit, constitutes a violation of Section 301(a) of the Act, 33 U.S.C. § 1311(a).

5 4. Teck Cominco Alaska, Incorporated ("Teck Cominco"), operates Red Dog Mine ("the
6 Mine"), which is located on Red Dog Creek, 82 miles north of Kotzebue, Alaska, at latitude 68° 4'
7 17" and longitude 162° 52' 5". Teck Cominco is a "person" within the meaning of Section 502(5) of
8 the Act, 33 U.S.C. § 1362(5).

9 5. The Mine, which was under Teck Cominco's control at all times relevant to this action,
10 discharges "pollutants" within the meaning of Section 502(6) of the Act, 33 U.S.C. § 1362(6), from a
11 "point source" (outfall 001) within the meaning of Section 502(14) of the Act, 33 U.S.C. § 1362(14),
12 into Middle Fork Red Dog Creek, which is "navigable waters" within the meaning of Section 502(7)
13 of the Act, 33 U.S.C. § 1362(7). The Mine's discharges constitute "discharges of pollutants" from a
14 point source, within the meaning of Section 502(12) of the Act, 33 U.S.C. § 1362(12).

15 6. Teck Cominco is authorized to discharge pollutants from the Mine under NPDES Permit
16 No. AK-003865-2 ("Permit"). Under Section 401 of the Act, Alaska Department of Environmental
17 Conservation ("ADEC") certified the Permit, and it became effective on August 28, 1998, and was
18 due to expire on August 28, 2003, but has been administratively extended under 40 CFR § 122.6.
19 Part I.A.1. of the Permit established an average monthly effluent limit of 170 mg/L, and a daily
20 maximum effluent limit of 196 mg/L, for total dissolved solids ("TDS"). *→ during spawning*

21 7. EPA issued a permit modification, with an effective date of August 22, 2003, with new
22 TDS limits and monitoring requirements. The Permit as modified limits the TDS load that can be
23 discharged from outfall 001 such that in-stream TDS concentration at various locations within the
24 creek do not exceed the applicable water quality criteria. An appeal of the permit modification (EAB
25 Appeal No. NPDES 03-09) stayed the effect of the new TDS effluent limits, however, and since that
26

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1 appeal is still pending as of the date of this Order, the Permit's original TDS limits, as set forth in
2 paragraph 6, remain in effect pending resolution of the appeal.

3 8. At times during the months of September 1998, May 1999 through October 1999, May
4 2000 through October 2000, May 2001 through October 2001, May 2002 through October 2002, and
5 May 2003 through August 2003, Teck Cominco violated the TDS effluent limits in the Permit. Teck
6 Cominco submitted information that suggests that it will not be in compliance with the Permit's
7 original TDS limits during the 2004 discharge season, though it likely would be in compliance with
8 the TDS limits in the permit modification that are currently under appeal.

9 9. Cominco's violations of Part I.A.1. of the Permit constitute violations of Section 301(a) of
10 the Act, 33 U.S.C. § 1311(a).

11 10. Taking into account the seriousness of the violations and Teck Cominco's good faith
12 efforts to comply, the schedule for compliance contained in the following ORDER is reasonable and
13 appropriate.

14 11. The "Main Stem Red Dog Creek mixing zone" begins at the confluence of North Fork
15 Red Dog Creek and Middle Fork Red Dog Creek and continues downstream for 1,930 feet. The
16 "Ikalukrok Creek mixing zone" begins at the confluence of Main Stem Red Dog Creek and
17 Ikalukrok Creek and continues downstream 3,420 feet. "Station 10" is a water quality monitoring
18 station located on the Main Stem Red Dog Creek a short distance upstream of the confluence with
19 the Ikalukrok Creek. "Station 160" is a water quality monitoring station on Ikalukrok Creek several
20 miles below the confluence with the Main Stem Red Dog Creek, and approximately three miles
21 below the confluence of Dudd Creek with Ikalukrok Creek. "Station 150" is a water quality
22 monitoring station located within 150 feet downstream of the edge of the Ikalukrok Creek mixing
23 zone.

24 12. The natural background TDS concentration (without the TDS contributed by the Mine's
25 wastewater) at Stations 10 and 160, when water is free flowing within the streams, is always less
26 than 500 mg/L.

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2 **II. ORDER**

3 13. Based upon the foregoing FINDINGS AND CONCLUSIONS, and pursuant to
4 Sections 308 and 309(a) of the Clean Water Act, 33 U.S.C. §§ 1318 and 1319(a), it is hereby
5 ORDERED as follows:

6 **Commencement of Discharge**

7 14. Teck Cominco shall not discharge from Outfall 001 until there is free flow of water in
8 Main Stem Red Dog Creek. Prior to beginning discharge in 2004, Teck Cominco shall consult with
9 EPA, Alaska Department of Natural Resources, Office of Habitat, Management, and Permitting, and
10 Alaska Department of Environmental Conservation, and Teck Cominco must receive written
11 approval from EPA.

12 **Schedule for Compliance**

13 15. Teck Cominco shall achieve compliance with its NPDES permit limit for TDS by
14 December 31, 2004.

15 **Interim TDS Limit**

16 16. After the commencement of discharge, Teck Cominco shall limit the TDS load
17 discharged from Outfall 001 so as to maintain in-stream TDS concentrations at or below 500 mg/L at
18 the edge of the mixing zone in Main Stem Red Dog Creek. This limitation is in effect until Arctic
19 Grayling have finished spawning in Main Stem Red Dog Creek.

20 17. The permittee must consult with the EPA, Alaska Department of Environmental
21 Conservation, and the Alaska Department of Natural Resources, Office of Habitat, Management, and
22 Permitting regarding the end of Arctic Grayling spawning, and must receive written approval from
23 EPA prior to increasing the TDS load discharged from Outfall 001 above the limit specified in
24 paragraph 16.

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1 18. After Arctic Grayling have finished spawning and Teck Cominco has received written
2 approval from EPA, Teck Cominco shall limit the TDS load discharged from Outfall 001 so as to
3 maintain in-stream TDS concentrations at or below all of the following concentrations at all times:

4 Outfall 001: Shall not exceed 3,900 mg/L

5 At the edge of the mixing zone in Main Stem Red Dog Creek: Shall not exceed 1500 mg/L
6 through the end of the discharge season

7 At the edge of the mixing zone in Ikalukrok Creek: Shall not exceed 1000 mg/L through the
8 end of the discharge season

9 Station 160: Shall not exceed 500 mg/L from July 25th through the end of the discharge
10 season.

11 19. In addition, flow volume must be limited as described in Paragraph 24.

12 **Monitoring** *Additional Grayling Testing*

13 20. TDS. Monitoring by direct laboratory testing shall be conducted when discharging at
14 Outfall 001. All samples for TDS shall be grab samples, and the date and time of sample collection
15 must be recorded. TDS shall be monitored twice per week at the downstream edge of the mixing
16 zone in Mainstem Red Dog Creek and at the downstream edge of the mixing zone in Ikalukrok
17 Creek. Teck Cominco shall also monitor TDS once per week at Stations 10, 150, and 160, and the
18 effluent. The sample for Station 10 shall be taken as close in time as practicable to one of the sample
19 events collected at the edge of the mixing zone in Mainstem Red Dog Creek; and the sample for
20 Station 150 shall be taken as close in time as practicable to one of the sampling events at the edge of
21 the mixing zone in Ikalukrok Creek. Conductivity shall be monitored concurrently with TDS
22 sampling at Stations 10, 150, and 160.

23 21. Stream Stage and Conductivity Correlation. Teck Cominco must update the
24 TDS/Conductivity correlation curves twice per discharge season with the direct laboratory testing
25 data for Station 10 and Station 160. The correlation curves must be updated once in mid-August
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1 using the data collected through August 15th and once at the end of the discharge season using the
 2 data collected from August 16th through the end of the discharge season.

3 22. Once per month carbonates, chlorides, sulfates, potassium, magnesium, calcium, and
 4 sodium shall be analyzed at Station 10, Station 150, Station 160, and the effluent. The carbonate
 5 analysis may be estimated based on direct measurement of alkalinity.

6 **Reporting**

7 23. Teck Cominco shall calculate and record the allowable flow volume from Outfall 001 at
 8 least twice each day using the formulas below and shall submit all of the data involved in those
 9 calculations (including the time the measurements were taken), and the calculation results, each
 10 month along with the discharge monitoring report (DMR). Teck Cominco shall base each
 11 calculation on data collected within two hours of each shift change, and shall make each calculation
 12 within one hour of the collection of data. The calculations and data for Station 160 shall be made
 13 and recorded when the TDS limit for Station 160 is in effect. The allowable flow calculated from
 14 measurements taken at Station 10 and 160, and the outfall must reflect the stream conditions at each
 15 station and the outfall flow that are occurring at approximately the same time frame (i.e., the
 16 conductivity and flow measurements at Station 10, Station 160, and the flow from the outfall must
 17 be taken within 30 minutes of each other). The following shall be collected and calculated:

19 **Effluent**

20 Assume the effluent concentration (C_e) is equal to 3900 mg/L
 21 Measure the effluent flow (Q_e)

22 **Station 10**

23 Measure conductivity at Station 10
 24 Calculate the total TDS concentration at station 10 ($C_{10(\text{total})}$) using the measured conductivity
 25 at Station 10
 26 Measure the total flow at station 10 ($Q_{10(\text{total})}$)
 27 Calculate the flow at station 10 (Q_{10}) minus the effluent flow at station 10 by using the
 28 equation: $Q_{10} = Q_{10(\text{total})} - Q_e$

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1 Calculate the TDS concentration at station 10 (C_{10}) minus the TDS contribution from the
 2 effluent using the following equation:

$$C_{10} = \frac{(C_{10(\text{total})} Q_{10(\text{total})}) - (3900 Q_e)}{(Q_{10(\text{total})} - Q_e)}$$

3
 4 Calculate the allowable effluent flow ($Q_{\text{allowable}}$) expected to result in 500 mg/L TDS at station
 10, when Arctic grayling are spawning, and 1500 mg/L TDS at station 10 when Arctic grayling have
 finished spawning, using the following equation:

$$Q_{\text{allowable}} = \frac{Q_{10} (C_{\text{criteria}} - C_{10})}{(3900 - C_{\text{criteria}})}$$

6
 7 Where, $C_{\text{criteria}} = 500$ mg/L when Arctic grayling are spawning, and 1500 mg/L when Arctic
 grayling have finished spawning.

8 Station 160

9 Measure the conductivity at Station 160

10 Calculate the total TDS concentration at station 160 ($C_{160(\text{total})}$) using the measured
 conductivity of Station 160

11 Measure the total flow at station 160 ($Q_{160(\text{total})}$)

12 Calculate the flow at Station 160 (Q_{160}) minus the effluent flow at station 160 by using the
 equation: $Q_{160} = Q_{160(\text{total})} - Q_e$

13 Calculate the TDS concentration at Station 160 (C_{160}) minus the TDS contribution from the
 effluent using the following equation:

$$C_{160} = \frac{(C_{160(\text{total})} Q_{160(\text{total})}) - (3900 Q_e)}{(Q_{160(\text{total})} - Q_e)}$$

14 Calculate the allowable effluent flow ($Q_{\text{allowable}}$) expected to result in 500 mg/L TDS at station
 15 160 using the following equation:

$$Q_{\text{allowable}} = \frac{Q_{160} (500 - C_{160})}{(3900 - 500)}$$

16
 17 24. The $Q_{\text{allowable}}$ calculated above must be compared to the $Q_{\text{allowable}}$ calculated for station 10.
 18 Teck Cominco must discharge at or below the more restrictive $Q_{\text{allowable}}$

19 25. Calculations of TDS concentrations based on conductivity shall be made using
 20 correlation curves that are based on TDS and conductivity measurements made pursuant to this
 21 Order.

22 26. Teck Cominco shall submit the results of the monitoring, calculations, and testing
 23 described in paragraphs 20, 21, 22, and 23 in the monthly discharge monitoring reports (DMRs).

24 27. At the end of the discharge season, Teck Cominco shall submit a report, with the final
 25 DMR for the season, which compares the calculated TDS values in Main Stem Red Dog Creek and

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1 Ikalukrok Creek (based on the measured conductivity in the creeks) to the actual measured values.

2 The report shall include the following information:

- 3 (a) Measured TDS concentration at the edge of the edge of the mixing zone in Main Stem
4 Red Dog Creek and at Station 10, and the date and time each sample was taken,
- 5 (b) Measured conductivity at station 10, and predicted TDS concentration at Station 10 at
6 the date and approximate time the samples were taken (i.e., within one hour of sample
7 collection),
- 8 (c) Measured TDS concentration at Station 160, and the date and time each sample was
9 taken,
- 10 (d) Measured conductivity at Station 160, and predicted TDS concentration at Station
11 160 at the date and approximate time the samples were taken (i.e., within one hour of
12 sample collection).

13 28. Teck Cominco shall submit all information required by this Order to:

14 Eva Chun, Compliance Officer
15 U.S. Environmental Protection Agency, Region 10
16 NPDES Compliance Unit, OW-133
1200 Sixth Avenue
Seattle, Washington 98101

17 Sharmon Stambaugh, Environmental Specialist
18 Alaska Department of Environmental Conservation
19 Division of Air and Water Quality
555 Cordova Street
Anchorage, Alaska 99501

20 **Quality Assurance Plan**

21 29. Teck Cominco shall update, as needed, the Quality Assurance Plan previously submitted
22 to EPA with the Modified Order by Consent under Docket No. CWA-10-99-0167 and last revised
23 July 2002. The Plan shall be updated to include the new conditions of this Order not covered by the
24 last QAPP submitted to EPA. The Plan shall describe the operational procedures, quality assurance
25 and control measures, and calibration procedures for measuring conductivity, TDS, and flow at
26 Stations 10 and 160.

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2 **IV. SANCTIONS AND ENFORCEMENT**

3 30. Violation of, or failure to comply with, the provisions of this Order may subject Teck
4 Cominco to: (1) civil penalties of up to \$32,500 per day of violation pursuant to Section 309(d) of
5 the Act, 33 U.S.C. § 1319(d), and 40 C.F.R. Part 19; (2) administrative penalties of up to \$11,000
6 per day for each violation, pursuant to Section 309(g) of the Act, 33 U.S.C. § 1319(g), and 40 C.F.R.
7 Part 19; or (3) termination of the Permit under 40 C.F.R. § 122.64.

8 31. Nothing in this Order shall be construed to relieve Teck Cominco of the requirements of
9 its NPDES permit or of applicable requirements of federal, state, or local law. EPA reserves the
10 right to take enforcement action as authorized by law for any violation of this Order, and for any
11 future or past violation of the Permit or any other applicable legal requirements.

12 **IV. GENERAL PROVISIONS**

13 32. Reevaluation of Order's Requirements. EPA and Teck Cominco each understand that
14 information will become available during the performance of this Order that may justify reevaluation
15 of some of its provisions. EPA and Teck Cominco intend to confer periodically to exchange any
16 new information, and to discuss any amendment to the Order's various terms that may be justified.

17 **33. Force Majeure**

18 (a) If any event occurs which causes delay and effectively precludes compliance with the
19 terms of this Order, Teck Cominco shall promptly notify EPA orally and shall, within seven days of
20 oral notification to EPA, notify EPA in writing of the anticipated length and cause of the delay, the
21 measures taken and to be taken by Teck Cominco to prevent or minimize the delay, and the timetable
22 by which Teck Cominco intends to implement these measures.

23 (b) If EPA determines, in its discretion, that the delay or anticipated delay of an obligation
24 under this Order has been caused, or will be caused, by circumstances beyond the reasonable control
25 and despite the due diligence of Teck Cominco, then the time for performance of the delayed
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1 obligation shall be excused or extended for a period equal to the delay resulting from such
2 circumstances.

3 (c) Force Majeure shall not include increased costs of performance of the terms and
4 conditions of the Order, changed economic circumstances, or reasonably foreseeable seasonal
5 fluctuations in the weather conditions of the region.

6 34. Reservation of Rights


7 (a) The consent to this Order is not an admission of liability by Teck Cominco on any issue
8 dealt with in this Order. In consenting to this Order, Teck Cominco does not admit, and reserves the
9 right to controvert in any subsequent proceedings, the validity of or responsibility for any of the
10 factual or legal determinations made herein. However, by its consent to this Order, Teck Cominco
11 agrees that it will not controvert or challenge, in any subsequent proceedings initiated by the EPA or
12 the United States, the validity of this Order or the authority of EPA to issue and enforce this Order.

13 (b) Teck Cominco expressly reserves the right to claim that no harm has been or will be
14 caused by the discharge described in this Order.

15 35. Parties Bound. This Order shall apply and be binding upon Teck Cominco, their agents,
16 successors, and assigns and upon all persons, contractors, and consultants acting on behalf of Teck
17 Cominco.

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For: 
Randall F. Smith
Director, Office of Water
U.S. Environmental Protection Agency, Region 10

May-07-2004 02:30pm From: RED DOG ENVIRONMENTAL

9074289314

T-619 P.001

F-216

1 AGREED AND CONSENTED TO BY:

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3 Teck Cominco Alaska Incorporated

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5 By: Keith Malone
6 for R. G. Scott
General Manager

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9 Date: 07 May 04

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